

We claim:

1. A triggered response composition comprising: one or more polyelectrolytes in contact with a liquid medium that is stable and that exhibits one or more chemical/physical responses; wherein the chemical/physical response is triggered upon one or more ionic strength changes to the liquid medium; wherein the polyelectrolyte is one or more acidic homopolymers, copolymers, polymer blends and salts thereof; one or more basic homopolymers, copolymers, polymer blends and salts thereof; and one or more amphoteric homopolymers, copolymers, polymer blends and salts thereof.
2. The triggered response composition according to claim 1 wherein the polyelectrolyte is one or more alkali soluble or swellable polymers comprising: (a) 15-70 weight percent of one or more acidic monomers; (b) 15-80 weight percent of one or more non-ionic vinyl monomers; (c) 0-30 weight percent of one or more non-ionic vinyl surfactant monomers; and, optionally, (d) 0-5 weight percent of one or more polyethylenically unsaturated monomers; and wherein the chemical/physical response of the polymers as a function of ionic strength changes is dependent on one or more parameters selected from the group consisting of (i) the type and amounts of acidic monomers, (ii) the degree of neutralization of the acidic monomers, (iii) the type and amounts of non-ionic vinyl surfactant monomers, (iv) the type and amounts of non-ionic vinyl monomers, (v) the type and amounts of polyethylenically unsaturated monomers, (vi) the pH of the aqueous system and (vii) combinations thereof; wherein the chemical/ physical response of the composition is selected from selected from dispersing, disintegrating, dissolving, destabilizing, deforming, swelling, softening, flowing and combinations thereof; and wherein the liquid medium is an aqueous system.
3. A triggered response barrier composition comprising: one or more polyelectrolytes in contact with a liquid medium, wherein the barrier composition surrounds, encapsulates or forms a matrix with one or more

active ingredients; wherein the barrier composition is stable in the liquid medium; wherein the barrier exhibits one or more chemical/physical responses that is triggered upon one or more ionic strength changes to the liquid medium; and wherein the barrier composition is capable of releasing the active ingredients to the liquid medium as a result of the triggered response; and wherein the polyelectrolyte is one or more acidic homopolymers, copolymers, polymer blends and salts thereof; one or more basic homopolymers, copolymers, polymer blends and salts thereof; and one or more amphoteric homopolymers, copolymers, polymer blends and salts thereof.

4. The triggered response barrier composition according to claim 3 wherein the barrier composition is in the form of a film, wherein the liquid medium is an aqueous system, and wherein the chemical/ physical response of the composition is selected from selected from dispersing, disintegrating, dissolving, destabilizing, deforming, swelling, softening, flowing and combinations thereof.
5. The triggered response barrier composition according to claim 4, wherein the barrier composition is stable and insoluble in an aqueous system at relatively high ionic strength and wherein the composition disperses, dissolves, swells or disintegrates in an aqueous system at relatively low ionic strength, and wherein the chemical/physical response of the polymers is a function of changes in one or more parameters in addition to ionic strength selected from the group consisting of: ion concentration, surfactant concentration, acid strength and concentration, base strength and concentration, pH, buffer strength and capacity, temperature, hydrogen bonding, hydrogen bonding solvents, organic solvents, osmotic pressure, dilution, viscosity, electrochemical potential, conductivity, ion mobility, charge mobility, diffusion, surface area, mechanical forces, radiation and combinations thereof.

6. A device for the triggered release of one or more active ingredients to a liquid medium comprising:

- (d) one or more active ingredients;
- (e) one or more additives; and
- 5 (f) a barrier composition comprising one or more ionic strength responsive polyelectrolytes;

wherein the barrier composition surrounds, encapsulates or forms a matrix with one or more active ingredients; wherein the barrier composition is stable in the liquid medium; wherein the polyelectrolyte is one or more acidic homopolymers, copolymers, polymer blends and salts thereof; one or more basic homopolymers, copolymers, polymer blends and salts thereof; and one or more amphoteric homopolymers, copolymers, polymer blends and salts thereof; wherein the barrier exhibits one or more chemical/physical responses selected from dispersing, disintegrating, dissolving, destabilizing, swelling, 10 softening, flowing and combinations thereof; wherein the chemical/physical response of the composition is triggered upon one or more ionic strength changes to the aqueous system; and wherein the device is capable of releasing the active ingredients to the aqueous system as a result of the triggered response of the barrier composition.

20

7. A process for triggering the release of one or more active ingredients to a liquid medium comprising the steps of:

- (c) Surrounding, encapsulating or forming a matrix with one or more active ingredients with an ionic strength responsive barrier composition, the barrier being substantially impermeable to releasing the active ingredients to the liquid medium and remaining insoluble in the liquid medium; and
- (d) altering the ionic strength of the liquid medium;

25

wherein the polyelectrolyte is one or more acidic homopolymers, copolymers, polymer blends and salts thereof; one or more basic homopolymers, copolymers, polymer blends and salts thereof; and one or more amphoteric homopolymers, copolymers, polymer blends and salts thereof; and wherein

30

the barrier composition disperses, disintegrates, dissolves or swells and becomes substantially permeable, thereby triggering the release of the active ingredients into the liquid medium.

5 8. The process according to claim 7 wherein a device for the triggered release of one or more active ingredients to an aqueous system is prepared, the device comprising:

- (a) one or more active ingredients;
- (b) one or more additives; and
- 10 (c) a barrier composition comprising one or more ionic strength responsive polyelectrolytes;

wherein the barrier composition surrounds, encapsulates or forms a matrix with one or more active ingredients; wherein the barrier composition is stable and insoluble in an aqueous system at relatively high ionic strength; wherein the barrier exhibits one or more chemical/physical responses selected from dispersing, disintegrating, dissolving, destabilizing, swelling, softening, flowing and combinations thereof; wherein the chemical/physical response of the composition is triggered upon one or more ionic strength changes to the aqueous system; wherein the device is capable of releasing the active ingredients to the aqueous system as a result of the triggered response of the barrier composition; wherein the device is prepared using coating technology selected from the group consisting of fluid bed spray coating, Wurster coating, Pan coating and co-extrusion, coacervation, spray drying and spray chilling; and optionally, wherein one or more beneficial liquid ingredients are co-25 granulated with one or more solid active ingredients in the form of solid granules, pellets, tablets, encapsulated granules, sachets, matrix beads and capsules. in an altered or separate aqueous system